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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,353	09/09/2003	Fami Weaver	2285	2116

28005 7590 05/05/2006

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KSOPHT0101-Z2100  
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EXAMINER

KHAN, SUHAIL

ART UNIT PAPER NUMBER

2617

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



### DETAILED ACTION

1. The Art Unit location of your application in the USPTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Art Unit 2617.

#### *Continued Examination Under 37 CFR 1.114*

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/6/2006 has been entered.

#### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, 10, 21, 25-26 and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 2004/0203855 to Veerasamy et al, in view of U.S. Pat. App. Pub. No. 2002/0090947 to Brooks et al and further in view of U.S. Pat. No. 6459695 to Schmitt.

Referring to **claim 1**, Veerasamy et al disclose a wireless communication system in which a mobile station engages in a call via air interface communication with a base station (page 2, paragraph 24, mobile stations, base stations), a method comprising: making a determination that the call has been dropped (page 3, paragraph 33, drop); determining a call-

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drop location of the mobile station (page 3, paragraph 34, call drop position), wherein the wireless communication system comprises position determining equipment (PDE) (page 3, paragraph 34, GPS); and wherein determining the call-drop location comprises the base station sending a position request to the PDE to determine the location of the mobile station, the position request including a mobile identification number (MIN) identifying the mobile station (page 5, paragraph 61, BS transmits control message with REPORT CALL DROP; page 3, paragraph 34, mobile station equipped with GPS; it is inherent that the request includes the mobile identification number as the GPS is in the mobile station for which the position is desired).

Veerasamy et al do not disclose that the base station makes a determination that the call has been dropped. The examiner maintains that the concept that the base station makes a determination that the call has been dropped was well known in the art as taught by Brooks et al.

In a similar field of endeavor, Brooks et al show that the base station can determine that a call was dropped (page 2, paragraph 21).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al to show disclose that the base station makes a determination that the call has been dropped, as taught by Brooks et al, the motivation being the ability for both the mobile station and the base station to monitor the call (Brooks et al, page 2, paragraph 21).

The combination of Veerasamy et al and Brooks et al does not disclose determining a call-drop location responsive to the base station making the determination that the call has been dropped.

In a similar field of endeavor, Schmitt shows determining location of wireless station when call was dropped (col 4, lines 1-5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination of Veerasamy et al and Brooks et al to show determining a call-drop location responsive to the base station making the determination that the call has been dropped, as taught by Schmitt, the motivation being enabling the base station to use the location of wireless unit to circumscribe a hot spot area (Schmitt, abstract).

Referring to **claim 3**, Veerasamy et al disclose the method of claim 1, wherein the mobile station is communicatively coupled a network entity over the air interface, the method further comprising storing the call-drop location in a network entity (page 4, paragraph 46, transfer position data to RF coverage server).

Referring to **claim 10**, Veerasamy et al disclose the method of claim 1, wherein making the determination that the call in which the mobile station was engaged has been dropped comprises the base station determining that the call cannot be handed off to another cell-site (page 3, paragraph 33, drop, it is inherent that when a call is dropped handoff can not take place).

Referring to **claim 21**, Veerasamy et al disclose a system comprising: a mobile station (page 2, paragraph 24, mobile stations); a base station communicatively coupled to the mobile station (page 2, paragraph 24, mobile stations, base stations); wherein the mobile station is arranged to engage in a call over an air interface, and wherein (i) make a determination that the call in which the mobile station was engaged has been dropped (page 3, paragraph 33, drop), (ii) cause position determining equipment (PDE) to determine a call-drop location of the mobile station (page 5, paragraph 61, BS transmits control message with REPORT CALL DROP; page 3, paragraph 34, mobile station equipped with GPS). Veerasamy et al do not disclose that the base station is arranged to make a determination that the call in which the mobile station was

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engaged has been dropped. The examiner maintains that the concept that the base station is arranged to make a determination that the call in which the mobile station was engaged has been dropped was well known in the art as taught by Brooks et al.

In a similar field of endeavor, Brooks et al show that the base station can determine that a call was dropped (page 2, paragraph 21).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al to show that the base station is arranged to make a determination that the call in which the mobile station was engaged has been dropped, as taught by Brooks et al, the motivation being the ability for both the mobile station and the base station to monitor the call (Brooks et al, page 2, paragraph 21).

The combination of Veerasamy et al and Brooks et al does not disclose determining call-drop location responsive to making the determination that the call in which the mobile station was engaged has been dropped. The examiner maintains that the concept of determining call-drop location responsive to making the determination that the call in which the mobile station was engaged has been dropped was well known in the art as taught by Schmitt.

In a similar field of endeavor, Schmitt shows determining location of wireless station when call was dropped (col 4, lines 1-5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al to show of determining call-drop location responsive to making the determination that the call in which the mobile station was engaged has been dropped, as taught by Schmitt, the motivation being enabling the base station to use the location of wireless unit to circumscribe a hot spot area (Schmitt, abstract).

Referring to **claim 25**, Veerasamy et al disclose the system of claim 21, wherein the network entity comprises memory; and wherein the network entity is further arranged to store the call-drop location in the memory to thereby log locations of call drop events (page 3, paragraph 35, RF coverage server builds up a database of service drop/call position information).

Referring to **claim 26**, Veerasamy et al disclose the system of claim 21, wherein the network entity being arranged to make the determination that the call in which the mobile station was engaged has been dropped comprises the network entity being arranged to make the determination that the call cannot be handed off to another a cell-site (page 3, paragraph 33, drop, it is inherent that when a call is dropped handoff can not take place).

Referring to **claim 28**, Veerasamy et al disclose a base station comprising: a first routine to make a determination that a call in which a mobile station was engaged has been dropped (page 3, paragraph 33, drop); and a second routine to cause position determining equipment (PDE) to determine a call-drop location of the mobile station (page 3, paragraph 34, call drop position; GPS). Veerasamy et al do not disclose making the determination that the call in which the mobile station was engaged has been dropped in response to the first routine. The examiner maintains that the concept of making the determination that the call in which the mobile station was engaged has been dropped in response to the first routine was well known in the art as taught by Schmitt.

In a similar field of endeavor, Schmitt shows determining location of wireless station when call was dropped (col 4, lines 1-5).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al to show a base station comprising: a first routine to make a

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determination that a call in which a mobile station was engaged has been dropped; and a second routine to cause position determining equipment (PDE) to determine a call-drop location of the mobile station in response to the first routine making the determination that the call in which the mobile station was engaged has been dropped, as taught Schmitt, the motivation being enabling the base station to use the location of wireless unit to circumscribe a hot spot area (Schmitt, abstract).

5. Claims 9 and 23-24 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. App. Pub. No. 2004/0203855 to Veerasamy et al in view of U.S. Pat. No. 6459695 to Schmitt and U.S. Pat. App. Pub. No. 2002/0090947 to Brooks et al, and further in view of U.S. Pat. No. 6343216 to Kim et al.

Referring to **claim 9**, the combination of Veerasamy et al, Brooks et al and Schmitt discloses the method of claim 1, for making the determination that the call in which the mobile station was engaged has been dropped (Veerasamy et al, page 3, paragraph 33, drop). Veerasamy et al, Brooks et al and Schmitt do not disclose determining, at the base station, that a duration of bad frames received from the mobile station is greater than a threshold level.

However, Kim et al disclose ways in which an MS and a BS detect a call drop (col 4, lines 35-40). A call drop is declared if a predetermined number of consecutive bad frames are received (col 4 line 62 – col 5 line 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al, Brooks et al and Schmitt to show making the determination that the call in which the mobile station was engaged has been dropped comprising determining, at the base station, that a duration of bad frames received from the mobile station is greater than



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a threshold level, as taught by Kim et al, the motivation being detecting a call drop and notifying the MS user regarding reconnection (Kim et al, col 5, lines 24-26).

Referring to **claim 23**, the combination of Veerasamy et al, Brooks et al and Schmitt discloses making the determination that the call in which the mobile station was engaged has been dropped (Veerasamy et al, page 3, paragraph 33, drop) as in the system of claim 21. Veerasamy et al and Schmitt do not disclose that the network entity is arranged to make the determination that a duration of bad frames received from the base station is greater than a threshold level.

However, Kim et al disclose ways in which an MS and a BS detect a call drop (col 4, lines 35-40). A call drop is declared if a predetermined number of consecutive bad frames are received (col 4 line 62 – col 5 line 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al, Brooks et al and Schmitt to show the network entity being arranged to make the determination that the call in which the mobile station was engaged has been dropped comprises the network entity being arranged to make the determination that a duration of bad frames received from the mobile station is greater than a threshold level, as taught by Kim et al, the motivation being detecting a call drop and notifying the MS user regarding reconnection (Kim et al, col 5, lines 24-26).

Referring to **claim 24**, the combination of Veerasamy et al, Brooks et al and Schmitt discloses the system of claim 21 (page 3, paragraph 33, drop). Veerasamy et al and Schmitt do not disclose that the threshold level is twenty bad frames.

However, Kim et al disclose a call drop if 80 consecutive bad frames are received (col 4 line 62 – col 5 line 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al, Brooks et al and Schmitt to show that the threshold level is twenty bad frames, as taught by Kim et al, the motivation being detecting a call drop and notifying the MS user regarding reconnection (Kim et al, col 5, lines 24-26).

6. Claim 29 rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. App. Pub. No. 2004/0203855 to Veerasamy et al, in view of U.S. Pat. App. Pub. No. 2002/0090947 to Brooks et al. and U.S. Pat. No. 6459695 to Schmitt, and further in view of U.S. Pat. App. Pub. No. 2002/0042260 to Saucedo et al.

Referring to **claim 29**, Veerasamy et al discloses a mobile station; a base station communicatively coupled to the mobile station; wherein the mobile station is arranged to engage in a call over an air interface (page 2, paragraph 24, mobile stations, base stations); wherein (i) make a determination that the call in which the mobile station was engaged has been dropped (page 3, paragraph 33, drop); and (ii) cause position determining equipment (PDE) to determine a call-drop location of the mobile station (page 3, paragraph 34, call drop position, mobile station equipped with GPS). Veerasamy et al does not disclose that the base station makes a determination that the call has been dropped.

In a similar field of endeavor, Brooks et al show that the base station can determine that a call was dropped (Brooks et al, page 2, paragraph 21),

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al to show that the base station makes a determination that the call has

been dropped, as taught by Brooks et al, the motivation being the ability for both the mobile station and the base station to monitor the call (Brooks et al, page 2, paragraph 21).

The combination of Veerasamy et al and Brooks et al does not show determining call-drop location responsive to making the determination that the call in which the mobile station was engaged has been dropped. Examiner maintains that the concept of determining call-drop location responsive to making the determination that the call in which the mobile station was engaged has been dropped was well known in the art as taught by Schmitt.

Schmitt shows determining location of wireless station when call was dropped (col 4, lines 1-5)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al and Brooks et al to show determining call-drop location responsive to making the determination that the call in which the mobile station was engaged has been dropped, as taught by Schmitt, the motivation being enabling the base station to use the location of wireless unit to circumscribe a hot spot area (Schmitt, abstract).

The combination of Veerasamy et al, Brooks et al and Schmitt does not disclose sending a location request to a mobile switching center (MSC), the location request including an ID identifying the mobile station; the MSC sending a position request to a mobile positioning center (MPC); the MPC forwarding the position request to the PDE; and the PDE responsively determining the location of the mobile station. The examiner maintains that the concept of sending a location request to a mobile switching center (MSC), the location request including an ID identifying the mobile station; the MSC sending a position request to a mobile positioning center (MPC); the MPC forwarding the position request to the PDE; and the PDE responsively

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determining the location of the mobile station was well known in the art as taught by Saucedo et al.

In a similar field of endeavor, Saucedo et al show the MSC requesting the position from the MPC and the MPC relaying the position request to the PDE (Saucedo et al, page 3, paragraph 26).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Veerasamy et al, Brooks et al and Schmitt to show sending a location request to a mobile switching center (MSC), the location request including an ID identifying the mobile station; the MSC sending a position request to a mobile positioning center (MPC); the MPC forwarding the position request to the PDE; and the PDE responsively determining the location of the mobile station, as taught by Saucedo et al, the motivation being providing accurate location information with minimal messaging (Saucedo et al, page 1, paragraph 7).

### ***Response to Arguments***

7. Applicant's arguments filed 3/22/2006 have been considered but are moot in view of the new ground(s) of rejection necessitated by amendment.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suhail Khan whose telephone number is (571) 272-7910. The examiner can normally be reached on M-F from 8 am to 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild, can be reached at (571) 272-4090.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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